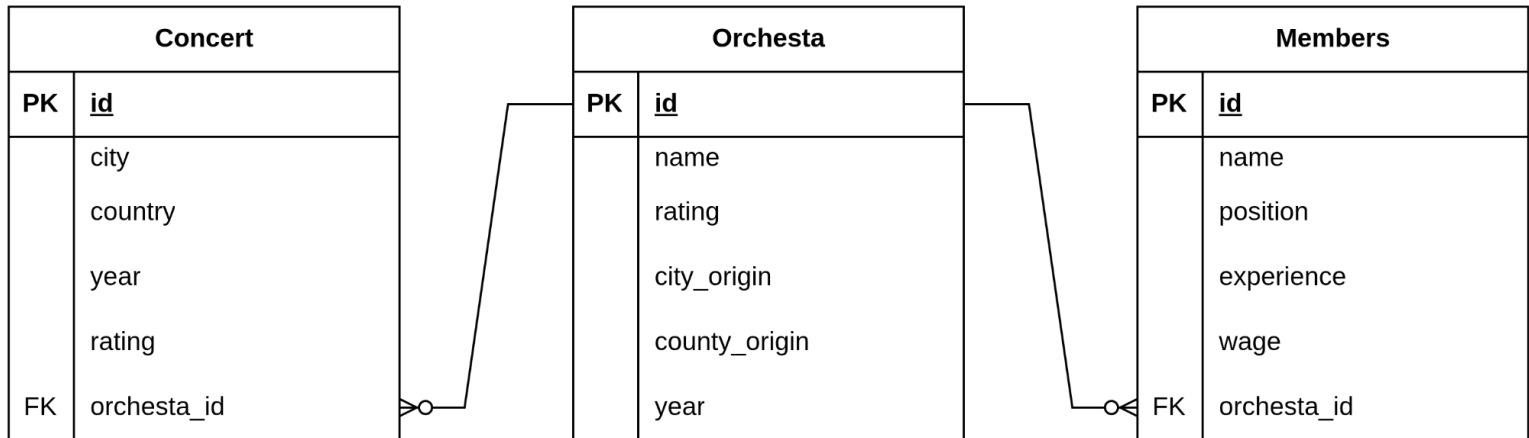


BASE DE DATOS

Clase Miércoles 28 de Mayo de 2025

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APE: Álgebra Relacional y SQL Modelo Relacional



SQL DATABASE ruiz_articulos

```
CREATE DATABASE orquesta;
USE orquesta;
```

```
CREATE TABLE orquestras(
id INT AUTO_INCREMENT PRIMARY KEY,
name VARCHAR(50) NOT NULL,
rating DECIMAL NOT NULL,
city_origin VARCHAR(32) NOT NULL,
country_origin VARCHAR(32) NOT NULL,
year INT NOT NULL
);
```

```
CREATE TABLE concerts(
id INT AUTO_INCREMENT PRIMARY KEY,
city VARCHAR(64) NOT NULL,
country VARCHAR(32) NOT NULL,
year INT NOT NULL,
rating DECIMAL NOT NULL,
orchestra_id INT,
FOREIGN KEY (orchestra_id) REFERENCES orquestras(id)
);
```

```
CREATE TABLE members(
id INT AUTO_INCREMENT PRIMARY KEY,
name VARCHAR(64) NOT NULL,
position VARCHAR(32) NOT NULL,
experience INT NOT NULL,
wage DOUBLE NOT NULL,
orchestra_id INT,
FOREIGN KEY (orchestra_id) REFERENCES orquestras(id)
);
```

Insertar Datos

orchestras

```
INSERT INTO orchestras (name, rating, city_origin, country_origin, year)
VALUES
('London Symphony Orchestra', 9.5, 'London', 'United Kingdom', 1904),
('Berlin Philharmonic', 9.7, 'Berlin', 'Germany', 1882),
('Vienna Philharmonic', 9.6, 'Vienna', 'Austria', 1842),
('New York Philharmonic', 9.3, 'New York', 'United States', 1842),
('Chicago Symphony Orchestra', 9.4, 'Chicago', 'United States', 1891),
('Royal Concertgebouw Orchestra', 9.6, 'Amsterdam', 'Netherlands', 1888),
('Orchestre de Paris', 9.0, 'Paris', 'France', 1967),
('Tokyo Symphony Orchestra', 8.8, 'Tokyo', 'Japan', 1946),
('Sydney Symphony Orchestra', 8.7, 'Sydney', 'Australia', 1932),
('São Paulo Symphony Orchestra', 8.9, 'São Paulo', 'Brazil', 1954);
```

concerts

```
INSERT INTO concerts (city, country, year, rating, orchestra_id)
VALUES
('London', 'United Kingdom', 2023, 9.4, 1),
('Berlin', 'Germany', 2022, 9.6, 2),
('Vienna', 'Austria', 2023, 9.5, 3),
('New York', 'United States', 2021, 9.2, 4),
('Chicago', 'United States', 2024, 9.3, 5),
('Amsterdam', 'Netherlands', 2023, 9.5, 6),
('Paris', 'France', 2022, 8.9, 7),
('Tokyo', 'Japan', 2023, 8.8, 8),
('Sydney', 'Australia', 2021, 8.7, 9),
('São Paulo', 'Brazil', 2024, 8.9, 10),
('Vienna', 'Austria', 2021, 9.0, 3),
('New York', 'United States', 2024, 9.1, 4),
('Amsterdam', 'Netherlands', 2022, 9.3, 6),
('Paris', 'France', 2021, 8.8, 7),
('Tokyo', 'Japan', 2022, 8.6, 8);
```

members

```
INSERT INTO members (name, position, experience, wage, orchestra_id)
VALUES
('María González', 'Violinista', 10, 1200.50, 1),
('Carlos Pérez', 'Director', 20, 3000.00, 2),
('Lucía Ramírez', 'Violonchelista', 8, 1100.75, 1),
('Andrés Herrera', 'Flautista', 6, 950.00, 3),
('Daniela Torres', 'Pianista', 12, 1400.00, 4),
('Sofía Jiménez', 'Clarinetista', 5, 900.00, 5),
('Jorge Andrade', 'Trompetista', 9, 1150.25, 6),
('Verónica Díaz', 'Oboísta', 7, 980.60, 7),
('Esteban Cabrera', 'Contrabajista', 11, 1250.80, 8),
```

```
('Carla Medina', 'Percusionista', 4, 870.00, 9),
('Luis Romero', 'Violinista', 15, 1300.00, 10),
('Angel Ruiz', 'Violinista', 30, 1200.50, 1);
```

```
INSERT INTO members (name, position, experience, wage)
VALUES
('Douglas Cordova', 'Percusionista', 30, 1200.50);
```

```
mysql> SELECT name FROM orchestras WHERE city_origin IN (SELECT DISTINCT city FROM concerts WHERE year = 2013);
+-----+
| name |
+-----+
| Orquesta Sinfónica Nacional del Ecuador |
| Orquesta de Cámara del Ecuador |
| Orquesta Metropolitana de Quito |
+-----+
3 rows in set (0,00 sec)
```

```
SELECT DISTINCT * FROM concerts WHERE year = 2013;
```

Sentencias SQL

1. Nombres y Cargos de todos los miembros de orquestas que tengan más de 20 años de experiencia.

```
SELECT name, position FROM members WHERE experience > 20;
```

```
mysql> SELECT name, position FROM members WHERE experience > 20;
+-----+-----+
| name | position |
+-----+-----+
| Angel Ruiz | Violinista |
| Douglas Cordova | Percusionista |
+-----+-----+
2 rows in set (0,00 sec)
```

2. Nombres y Cargos de todos los miembros de orquestas que tengan más de 20 años de experiencia y no pertenezcan a una orquesta.

```
SELECT name, position FROM members WHERE experience > 20 AND orchestra_id IS NULL;
```

```
mysql> SELECT name, position FROM members WHERE experience > 20 AND orchestra_id IS NULL;
+-----+-----+
| name | position |
+-----+-----+
| Douglas Cordova | Percusionista |
+-----+-----+
1 row in set (0,00 sec)
```

3. Nombres de todos los miembros de orquestas que tenga más de 10 años de experiencia y sean violinistas.

SELECT name FROM members WHERE position = 'Violinista' AND experience > 10 AND orchestra_id IS NOT NULL;

```
mysql> SELECT name FROM members WHERE position = 'Violinista' AND experience > 10 AND orchestra_id IS NOT NULL;
+-----+
| name |
+-----+
| Luis Romero |
| Angel Ruiz |
+-----+
2 rows in set (0,00 sec)
```

4. Seleccionar los nombres y cargos (es decir, el instrumento que tocan) de todos los miembros de orquesta que tengan más de 10 años de experiencia y no pertenezcan a orquestas con una calificación inferior a 8.0

SELECT name, position FROM members WHERE experience > 10 AND orchestra_id IN (SELECT id FROM orchestras WHERE rating > 8);

```
mysql> SELECT name, position FROM members WHERE experience > 10 AND orchestra_id IN (SELECT id FROM orchestras WHERE rating > 8);
+-----+-----+
| name | position |
+-----+-----+
| Angel Ruiz | Violinista |
| Carlos Pérez | Director |
| Daniela Torres | Pianista |
| Esteban Cabrera | Contrabajista |
| Luis Romero | Violinista |
+-----+-----+
5 rows in set (0,00 sec)
```